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PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application No.: 09/124,925

Group Art Unit: 1745

Applicant: Koichi ASHIZAWA et al.

Examiner: T. Dove

Filed: July 29, 1998

Attorney Docket: ASHI3001/FJD

Title: (As Amended) Current collector with penetrating holes of complicated shape for use in a secondary battery and manufacturing process thereof

RESPONSE TO DECISION ON PETITION

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

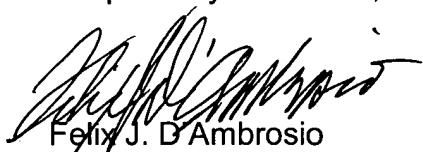
Sir:

In response to the Decision on Petition mailed August 18, 2004, attached is a corrected Appendix to the Brief on Appeal, which was filed on April 2, 2001.

It is respectfully submitted that the Brief on Appeal is now correctly filed and should be considered by the Board.

The claims reflect the claims on file as a result of the Response filed March 7, 2000.

Respectfully submitted,



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Date: September 20, 2004

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## APPENDIX

1. A current collector for use in a secondary battery consisting of a metal foil provided with a plurality of penetrating holes, each of which has a non-regular shape without burrs and satisfies the following expressions:

$$0.05 \leq S \leq 50$$

$$1.30 \leq M/N \leq 100$$

where: S is an area expressed in mm<sup>2</sup> of the penetrating hole, M is a peripheral length expressed in mm of the penetrating hole, and N is a peripheral length expressed in mm of a virtual circle having the area S of the penetrating hole.

2. A current collector for use in a secondary battery according to claim 1, wherein the thickness of the metal foil is in the range of 5 to 100  $\mu\text{m}$ .

### Claim 3 (Cancelled)

4. A method for producing the current collector of claim 1 for use in a secondary battery, comprising the steps of: passing a metal foil without a hole through between a concavo-convex roll having a plurality of convex parts and a smoothing roll under a given pressure; converting thereby portions of the metal foil without a hole and pressed by the convex parts of the concavo-convex roll into portions with penetrating holes; and passing the metal foil with the penetrating holes further through between a pair of metal smoothing rolls, whereby burrs produced at each periphery of the penetrating holes are removed.